

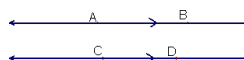
Chapter 3 Parallel and Perpendicular Lines

3-1 Identify Pairs of Lines and Angles

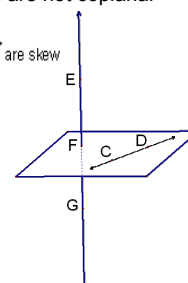
Parallel lines (\parallel)-coplanar lines that do not intersect

Skew lines -lines that do not intersect and are not coplanar

$\overleftrightarrow{AB} \parallel \overleftrightarrow{CD}$

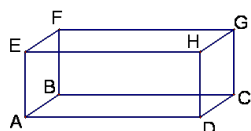


\overleftrightarrow{CD} and \overleftrightarrow{FG} are skew



Parallel planes-planes that do not intersect

plane $EAD \parallel$ plane FBC
plane $GHD \parallel$ plane FEA



$\overline{EH} \parallel \overline{AD}$
 $\overline{EH} \parallel \overline{FG}$

\overline{EH} and \overline{GC} are skew lines

Postulate 13 Parallel Postulate—If there is a line and a point not on the line, then there is exactly one line through the point parallel to the given line.



Postulate 14 Perpendicular Postulate-- If there is a line and a point not on the line, then there is exactly one line through the point perpendicular to the given line.

Angles formed by transversals.

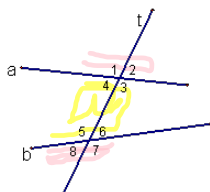
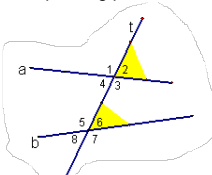
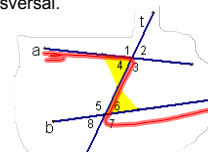
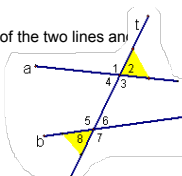
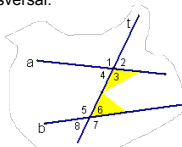
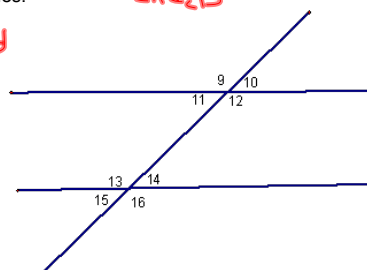
(Turn paper over to take notes on these angles)


Transversal--a line that intersects 2 or more coplanar lines at different points

interior angles

 $\angle 3, \angle 4, \angle 5, \angle 6$

exterior angles

 $\angle 1, \angle 2, \angle 7, \angle 8$ Corresponding Angles two angles that occupy corresponding positions.
 $\angle 2 \leftrightarrow \angle 6$ $\angle 3 \leftrightarrow \angle 7$
 $\angle 1 \leftrightarrow \angle 5$ $\angle 4 \leftrightarrow \angle 8$
Alternate interior angles two angles that lie between the two lines and are on opposite sides of the transversal.
 $\angle 4 \leftrightarrow \angle 6$
 $\angle 3 \leftrightarrow \angle 5$
Alternate exterior angles two angles that are on the outside of the two lines and are on opposite sides of the transversal.
 $\angle 2 \leftrightarrow \angle 8$
 $\angle 1 \leftrightarrow \angle 7$
Consecutive (or Same-side) interior angles two angles that lie between the two lines and are on the same side of the transversal.
 $\angle 3 \leftrightarrow \angle 6$
 $\angle 4 \leftrightarrow \angle 5$
Interior angles: $\angle 11, \angle 12$ Exterior angles: $\angle 9, \angle 10$ Alternate interior angles: $\angle 12 \leftrightarrow \angle 13$ Alternate exterior angles: $\angle 9 \leftrightarrow \angle 16$ Consecutive interior angles (same-side interior): $\angle 12 \leftrightarrow \angle 14$ $\angle 10 \leftrightarrow \angle 15$ Corresponding angles: $\angle 11 \leftrightarrow \angle 13$
 $\angle 10 \leftrightarrow \angle 14$
 $\angle 12 \leftrightarrow \angle 16$
 $\angle 9 \leftrightarrow \angle 13$
 $\angle 11 \leftrightarrow \angle 15$




HW
p150-151
7-10, 18-25,
29-32